

THOMPSON & KNIGHT

LLP

ATTORNEYS AND COUNSELORS

1200 SAN JACINTO CENTER 98 SAN JACINTO BOULEVARD AUSTIN, TEXAS 78701-4081 (512) 469-6100 FAX (512) 469-6180 www.tklaw.com 2818 35

01-02-0

AUSTIN DALLAS FORT WORTH HOUSTON MONTERREY, MEXICO

> T C

November 27, 2002

CERTIFICATE OF MAILING 37 C.F.R. 1.8

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231, on the date below:

11-27-02

Date

Signature

Commissioner for Patents Washington, DC 20231

RE: SN 10/078,252 "COMPUTATIONAL METHOD, SYSTEM, AND APPARATUS"- Greg

North

(Our File No. 501143.000024)

Sir:

Enclosed for filing in connection with the above-referenced patent application are:

1. Information Disclosure Statement (PTO/SB/08A); 3 pages

- 2. Copies of documents A1 A13; C1 C20 cited in the Information Disclosure Statement; and
- 3. Return receipt postcard.

In accordance with 37 C.F.R §§ 1.97(g),(h), the enclosed Information Disclosure Statement is not to be construed as a representation that a search has been made, and is not to be construed to be an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

The Information Disclosure Statement is being filed prior to the receipt of a first Office Action reflecting an examination on the merits, and hence is believed to be timely filed in accordance with 37 C.F.R § 1.97(b).

No fees are believed to be due in connection with the filing of these documents. However, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be deemed necessary for any reason relating to

Commissioner for Patents November 27, 2002 Page 2

the enclosed materials, the Commissioner for Patents is hereby authorized to deduct said fees from Thompson & Knight, L.L.P.'s Deposit Account No. 20-0821/501143.000024/AAW.

Applicants respectfully request that the listed documents be made of record in the present case. Please date stamp and return the enclosed postcard evidencing receipt of these materials.

Respectfully submitted,

Meiso

Aaron A. Weiss Reg. No. 46,163

AAW:ce Encl. EN CTRACE!

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Sheet 1

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

of

Complete if Known			
Application Number	10/078,252		
Filing Date	February 16, 2002		
First Named Inventor	North, Greg		
Art Unit	2818		
Examiner Name			
Attorney Docket Number	501143.000024		

	U.S. PATENT DOCUMENTS					
Examiner Initials		Document Number Number- Kind Code ² (if known	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
	A1	us- 6,341,299	01-22-2002	Romain		
	A2	us- 6,157,955	12-05-2000	Narad et al		
	A3	us- 6,151,393	11-21-2000	Jeong		
	A4	us- 6,141,705	10-31-2000	Anand et al		
	A5	us- 6,134,244	10-17-2000	Van Renesse et al		
	A6	us- 6,088,453	07-11-2000	Shimbo	additioning options and product and analysis of the second options	
	A7	us- 5,987,574	11-16-1999	Paluch		
	A8	us- 5,983,299	11-09-1999	Qureshi		
***************************************	A9	us- 5,764,554	06-09-1998	Monier		
****************	A10	us- 5,724.279	0303-1998	Benaloh et al		
	A11	us- 5,699,537	12-16-1997	Sharangpani et al		
	A12	us- 5,542,061	07-30-1996	Omata		
	A13	us- 4,799,149	01-17-1989	Wolf		
		US-				
		US-				
		US-				
		us-				
		US-				
		US-				
	1	US-				

FOREIGN PATENT DOCUMENTS						
Examiner Initials		Foreign Patent Document Country Code 3 - Number 4 - Kind Code 5 (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	 T
			V			
***************************************	***************************************				***************************************	
		AND THE RESERVE THE PROPERTY OF THE PROPERTY O		Interior control to the control of t		
······································			**************************************	A. (1911) - A. (19		
			,			

		errop des augustes. Er er vive autore dache destropresentation bestätlich die der verscher der Produktion.				

Examiner	Date	
Signature	Considered	

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB

Substitute for form 1449B/PTO

LIBADES!

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 2 of

Complete if Known			
Application Number	10/078,252		
Filing Date	February 16, 2002		
First Named Inventor	North, Greg		
Group Art Unit	2818		
Examiner Name			
Attorney Docket Number	501143.000024		

Examiner Initials	Cite No. ¹	 Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. 	T ²
	C1	MENEZES, A.J., et al "Efficient Implementation" from the Handbook of Applied Cryptography, (Boca Raton, CRS Press, 1997), pp. 591-607.	
	C2	DIMITROV, V. and COOKLEV, T., "Two Algorithms for Modular Exponentiation Using Nonstandard Arithmetics" IEICE Trans. Fundamentals, Vol. E78-A, No. 1, January 1995.	
No. 2 to the second distribution of	СЗ	KOC, C.K. and HUNG, C.Y., "Carry-Save Adders for Computing the Product AB Modulo N" Electronics Letters, Vol. 26, No. 13, (June 21, 1990), pp. 899-900	
	C4	FREKING, W. L. and PARHI, K.K., "Montgomery Modular Multiplication and Exponentiation in the Residue Number System" Proc. 33rd Asilomar Conf. Signals Systems and Computer, October 1999, pp. 1312-1316.	
	C5	TENCA, A.F. and KOC, C.K., "A Scalable Architecture for Montgomery Multiplication" in: KOC, C.K. and PAAR, C., Cryptographic Hardware and Embedded Systems, CHES 99, Lecture Notes in Computer Science, No. 1717. 1998, New York, NY: Springer-Verlog, 1999.	
	C6	KOC, C.K. and ACAR, T., " Montgomery Multiplication in GF (2k)" 3rd Annual Workshop on Selected Areas in Cryptography, (August 15-16, 1996), pp. 95-106.	
	C7	BAJARD, J.C., et al "An RNS Montgomery Modular Multiplication Algorithm" IEEE Transactions on Computer, Vol. 47, No. 7, (July 1998), pp. 766-776.	
	С8	ELDRIDGE, S.E., "A Faster Modular Multiplication Algorithm" International Journal of Computer Math, Vol. 40, (1991), pp. 63-68.	
. *************************************	C9	BOSSALAERS, A, et al "Comparison of Three Modular Reduction Functions" In Douglas R. Stinson, editor, Advances in Cryptology CRYPTO '93, Vol. 773 of Lecture Notes in Computer Science, (August 22-26, 1993), pp. 166-174.	
	C 10	MONTGOMERY, P.L., "Modular Multiplication Without Trial Division" Mathematics of Computation, Vol. 44, No. 170 (April 1985), pp. 519-521.	
or union on vi	C 11	KOC, C.K., et al "Analyzing and Comparing Montgomery Multiplication Algorithms" IEEE Micro, Vol. 16, Issue 3, (June 1996), pp. 26-33.	

Examiner	 Date	* '
Signature	Considered	<u> </u>

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

OTPE COOL UND

PTO/SB/08B (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

NEORMATION DISCLOSUS

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number 10/078,252

Filing Date February 16, 2002

First Named Inventor North, Greg

Group Art Unit 2818

Examiner Name

Attorney Docket Number 501143.000024

Complete if Known

Sheet 3 of 3

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the T2 Cite Examiner item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue Initials No. number(s) nublisher city and/or country where nublished С KORNERUP, P., " High-Radix Modular Multiplication for Cryptosystems" Department 12 of Mathematics and Computer Science, (1993), pp. 277-283. С SUNAR, B. and KOC, C.K., "An Efficient Optimal Normal Basis Type II Multiplier" Brief Contributions, IEEE Transactions on Computers, Vol. 50, No. 1, (January 2001), pp. 83-87. 13 KOC, C.K., "Comments on' Residue Arithmetic VLSI Array Architecture for Manipulator Pseudo-Inverse Jacobian С Computation' "Communications, IEEE Transactions on Robotics and Automation, Vol. 7, No. 5, (October 1991), 14 C SAVAS, E. and KOC, C.K., "The Montgomery Modular Inverse-Revisited" IEEE 15 Transactions on Computers, Vol. 49, No. 7, (July 2000), pp. 763-766. WALTER, C.D., "Montgomery's Multiplication Technique: How to Make it Smaller and Faster" in Cryptographic С Hardware and Embedded Systems - CHAS 1999, C. Paar (Eds.). K. Ko, Ed. 1999, Springer, Berlin Germany, 16 С OH, H. and MOON, J., "Modular Multiplication Method" IEE Proc.-Comput. Digit. Tech., Vol. 145, No. 4, (July 1998), pp. 317-318. 17 BLUM, T., " Modular Exponentiation on Reconfigurable Hardware" Master's thesis, ECE Department, Worcester С Polytechnic Institute, Submitted to Faculty 1999-04-08, Published May 1999. Retrieved from the Internet <URL: 18 http://www.wpi.edu/pubs/ETD/Available/etd-090399-090413/unrestricted/blum.pdf>. MARWEDEL, P., et al. "Built in Chaining: Introducing Complex Components into Architectural Synthesis." April 1996. Proceedings of the ASP-DAC, 1997. [online]. Retrieved from the Internet <URL: С 19 http://eldorado.uni-dortmund.de:8080/FB4/ls12/forshung/1997/aspdac/aspacPDF>. TIOUNTCHIK, A., and TRICHINA, E., "RSA Acceleration with Field Programmable Gate Arrays" Lecture Notes in С Computer Science, Vol. 1587, pp.164-176. Retrieved from the Internet: 20 <URL:http://citeseer.nj.nec.com/274658.html>.

Examiner	Date	
Signature	Considered	

+

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.